A NEW SPECIES OF TRIGONALID WASP PARASITIC ON THE SAWFLY *PERGA AFFINIS* KIRBY (HYMENOPTERA).

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(Five Text-figures.)

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Synopsis.

A new species of *Taeniogonalos* is described from inland New South Wales and Victoria. Re-examination of the Australian material placed in the genus *Taeniogonalos* has enabled a more satisfactory key for the separation of the species to be presented.

The trigonalid wasps of the genus *Taeniogonalos* are common parasites of Australian sawflies of the family Pergidae. This trigonalid genus has been revised by Riek (1954). Most of the material studied at that time had been collected from coastal regions. A new species is described from inland New South Wales and Victoria. The biology of the parasite is being studied by Dr. P. B. Carne.

Re-examination of the Australian material placed in the genus *Taeniogonalos* has enabled a more satisfactory key for the separation of the species to be presented.

Taeniogonalos venatoria, sp. nov.

Female.—Black, body marked with whitish-yellow and some reddish-brown; antenna usually all black, rarely pale at funicle segments 2 to 6 and then these segments pale more especially below; face black, widely marked with whitish (i.e., pale), mandibles pale except for teeth and narrowly at base, clypeus pale except at meson narrowly, pale areas very rarely joined at meson above, mesal and posterior margins of eye widely pale except at upper third, malar space pale, a pale area above antennal insertions, usually with two small pale spots below median ocellus, vertex with two pale transverse zones, separated at meson, with two small areas just anterior to their mesal ends, sometimes indistinct, occasionally joined to the transverse pale area and then normally large; colouring of head rather constant except for pale spots below median ocellus and smaller spots at vertex; colouring of thorax rather constant, thorax black, with distinct pale areas, pronotum with pale area on shoulders and anteriorly below, and usually a small spot below tegula, scutum pale anterolaterally, axilla pale distally, similar pale area on scutellum laterally, smaller transverse pale area on postscutellum, propodeum with larger pale area posterolaterally; thorax very rarely with an extra very small pale area on parapside at posteromesal corner; gaster with pale transverse bands on all but the third segment, segment 3 rarely with a very small pale spot laterally, pale bands of apical segments sometimes broken at meson; legs mostly reddish-brown, the femora more darkened, especially at base, with fore femur nearly all dark, coxae all dark, trochanters dark in part but fore trochanter pale anteriorly and hind trochanter usually all pale, trochanellus all pale; tibiae pale at base above and at least fore tibia with the pale area clearly white; wings in part almost clear but deeply infuscated over anterior third.

Antenna with scape, pedicel, and 24 funicle segments, with the apical segment somewhat longer than the penultimate. When the apical segment is shorter than the penultimate there are 25 funicle segments, due to subdivision of the normal apical segment, and when the normal penultimate segment and the preceding one are not

separated so that there are two enlarged apical segments, then there are only 23 funicle segments. Upper surface of body appearing glabrous between the ornamentation, more distinctly so on the head; gaster with the enlarged, backwardly directed ventral projection from segment 2 rounded at apex, sometimes with the process reduced and then narrower and pointed, rarely with the process completely absent; segment 3 ventrally with only a low transverse carina, in most cases just discernible (also present on those specimens with the process from the second segment reduced or absent). Tergite 2 of gaster with a rather glabrous basal triangle with irregular transverse rugae.

Male.—Not known.

Type.—Holotype ♀ and paratype ♀♀ in the C.S.I.R.O. Division of Entomology Collection, Canberra. Paratypes in the British Museum (Natural History).

Type Locality.—Benalla, Victoria (12 March, 1958, P. B. Carne), adults emerged January, 1959, reared from puparia of *Perga affinis* Kirby.

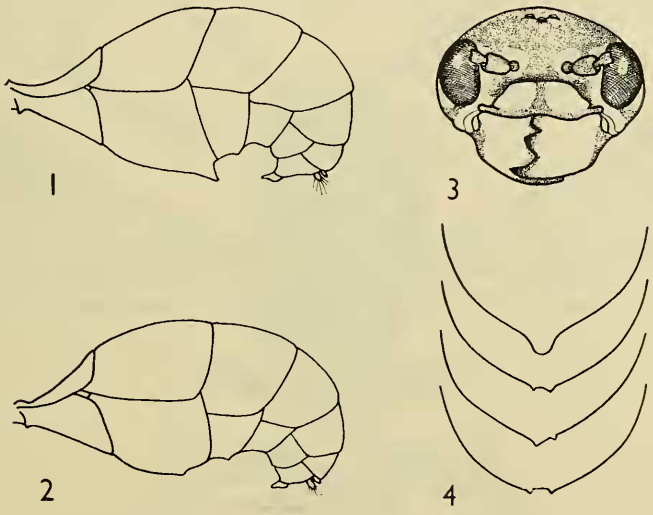

Fig. 1.—Side view of gaster of normal female. × 7.
Fig. 2.—Side view of gaster of female without process from second sternite. × 7.
Fig. 3.—Front view of head to show colour pattern. × 7.
Fig. 4.—Variation in the shape of the process from the second sternite of the gaster.

Specimens Examined.—A series of 42 female specimens from the type locality; 4 ♀♀, 5 miles S.W. Chiltern, Victoria (cocoons collected on 12th March, 1958, P. B. Carne, parasites emerged 31st March to 20th April, 1958); 15 ♀♀, 2 miles W. Rutherglen, Victoria (cocoons collected on 11 December, 1957, P. B. Carne, parasites emerged 5 April to 22 April, 1958); 19 ♀♀ W.S.W. Tumblong, New South Wales (cocoons collected on 10th December, 1957, P. B. Carne, parasites emerged 31st March to 24 April, 1958); 1 ♀ Ballarat, Victoria (28 May, 1957, M. F. Leask).

This species is very similar in most respects to *maculata*, but the whole body is more glabrous between the ornamentation. In *maculata* only the head appears glabrous to any extent. Although this difference is very obvious when the two species are compared, it is difficult to express in words. In the secondary sexual characters of the abdomen and in the structure of the antenna the two species are similar. There are some constant differences in colour, more particularly of the scutellum and the basal segments of the antenna. The species shows particular constancy of coloration except for one or two small areas on the head and one on the parapside as mentioned in the specific description.

It is most surprising that in this series of nearly one hundred specimens there is not a single male. In the series of 42 specimens from the type locality there are twelve abnormal specimens in which the ventral process from the second abdominal segment is either reduced or quite absent. In other respects these specimens have normal female genitalia and the antennae are typical female. Specimens from this locality show every gradation in this structure from full development to complete absence. In the well-developed condition this process forms a transverse lamella with a sharp distal margin. In the first stage of reduction the process is laterally compressed into a rather triangular spine. In other specimens this spine is reduced in strength

Fig. 5.—*Taeniogonalos venatoria*, sp. nov. Dorsal view. × 6.

and in a few specimens is completely absent. In those five specimens in which the spine is completely absent there is a small, round, median, sunken zone in the corresponding position on the sternite. This sunken zone is considerably smaller and of quite a different shape from the sunken zone appearing in a similar position in males of other species and is isolated from the caudal margin of the sternite. Apart from this one character these specimens are all typical females. Reduction in the development of this process from the second sternite is most unusual in specimens from the other localities. Only one of the remaining fifty or so specimens shows a slight reduction in the process.

Key to the Australian species of Taeniogonalos.

1 (2, 7) Head and thorax all black, abdomen all reddish-brown; wing only lightly infuscated but darker at costal space and at apex anteriorly ..... *semibrunnea* (Bischoff).

2 (7, 1) Species mostly black, marked with yellow and reddish-brown; wing deeply infuscated anteriorly.

3 (4) Scutellum all dark (sometimes with a pale lateral mark in the male); scape and pedicel not as dark as head; tibiae without a clear white mark above towards base; tergite 2 of gaster entirely punctate almost to base (process from sternite 3 of gaster (♀) only a low transverse carina; process from sternite 2 entire at apex, rather blade-like; female antenna usually with 24 funicle segments, male with 23) .... *maculata* (Smith).

4 (3) Scutellum with pale lateral mark; scape and pedicel black; at least fore tibia with a clear white mark above towards base; tergite 2 of gaster with a basal subglabrous triangle crossed by irregular transverse rugae.

5 (6) Process from sternite 3 of gaster (♀) strongly produced, transverse, clearly emarginate at apex; process from sternite 2 bluntly bifid at apex; female antenna with 22 funicle segments ..... *tenebrosa* (Riek).

6 (5) Process from sternite 3 of gaster (♀) only a low transverse carina; process from sternite 2 entire, rounded at apex, rather blade-like, sometimes quite reduced; female antenna usually with 24 funicle segments (less often 23 or 25) .... *venatoria*, sp. nov.

7 (1, 2) Species strongly marked with yellow or yellow and red; wing deeply infuscated anteriorly.

8 (9, 10) Ventral process of segment 2 of gaster (♀) slightly bifid at apex; segment 3 with a lamellate process; antenna (♀) with 23 funicle segments ..... *tricolor* (Rayment).

9 (10, 8) Ventral process of segment 2 of gaster (♀) entire at apex; segment 3 without process; antenna (♀) normally with 23 funicle segments ..... *tricolor similis* (Riek).

10 (8, 9) Ventral process of segment 2 of gaster (♀) slightly bifid at apex; segment 3 with a triangular-sided process; antenna (♀) with 20 funicle segments .. *chadwicki* (Riek).

Reference.

Riek, E. F., 1954.—Australian Trigonalidae (Hymenoptera, Ichneumonoidea). *Austr. Journ. Zool.*, 2: 296-307.